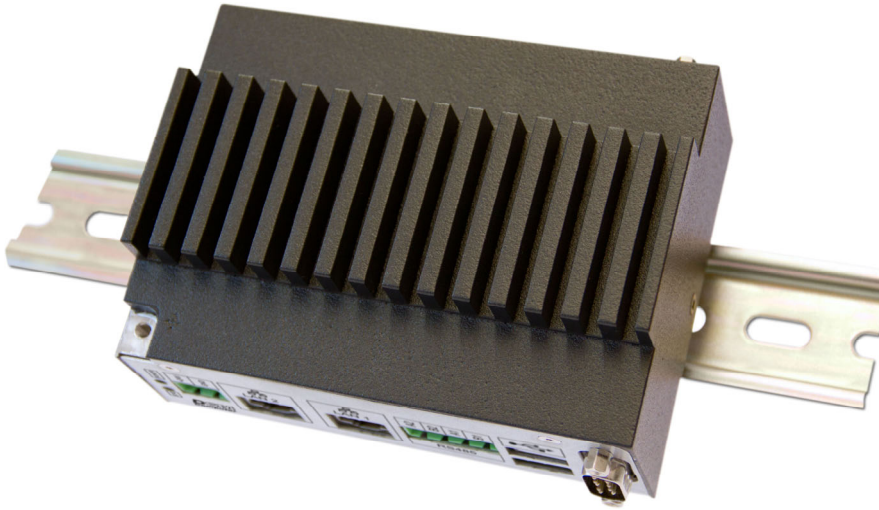
User Manual

DIN Rail PC H1-A



96M1670-Z510

96M1670-Z530

Published: July 22, 2013

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1. Copyright

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3. Technical Specifications

3.1 Embedded Controller

-1024 MB DDR2 RAM, 533 MHz
- Intel® US15W SCH system controller hub
- Intel® GMA 500, integrated in Intel® US15W SCH, up to 384 MB shared memory, max resolution 1920 x 1200
- 2 x GigaBit LAN, Intel® WG82583V
- 1 x VGA (service interface)
- 2 x serial ports RS485, electrically isolated, 1 x 4-pin connector
- 1 x serial port RS232
- 2 x USB 2.0
- SD-card slot, supports SD-, SDIO- and MMC-cards
- Qseven™ interface: Version 1.11 compliant
- System monitoring, watch-dog timer
- ACPI power management
- Operating temperatures: 0° ~ 45

3.2 Case

Solid high-quality industrial case for DIN rail mounting (35 mm)
- Mounting on DIN rail with connectors facing downwards
- Compatible fitting for electrical cabinet
- Control LEDs (Power on)
- Incl. DIN Rail mounting
- Power supply 24 VDC
- Dimensions WxDxH: 124.5 (7 U) x 90 x 41/55 mm

3.3 On Request

- In your customer color available
- With your corporate logo
- integrated M-Bus Master (fieldbus for consumption data acquisition) instead of RS232 resp. VGA
- Integrated digital IO interface

3.4 Options

- Second COM (RS232) instead of VGA
- 3.6 GB Flash onboard (96M1670-Z510 only)
- 7.2 GB Flash onboard (96M1670-Z530 only)

2 years warranty, burn-in, CE-compliant

3.5 Order Number

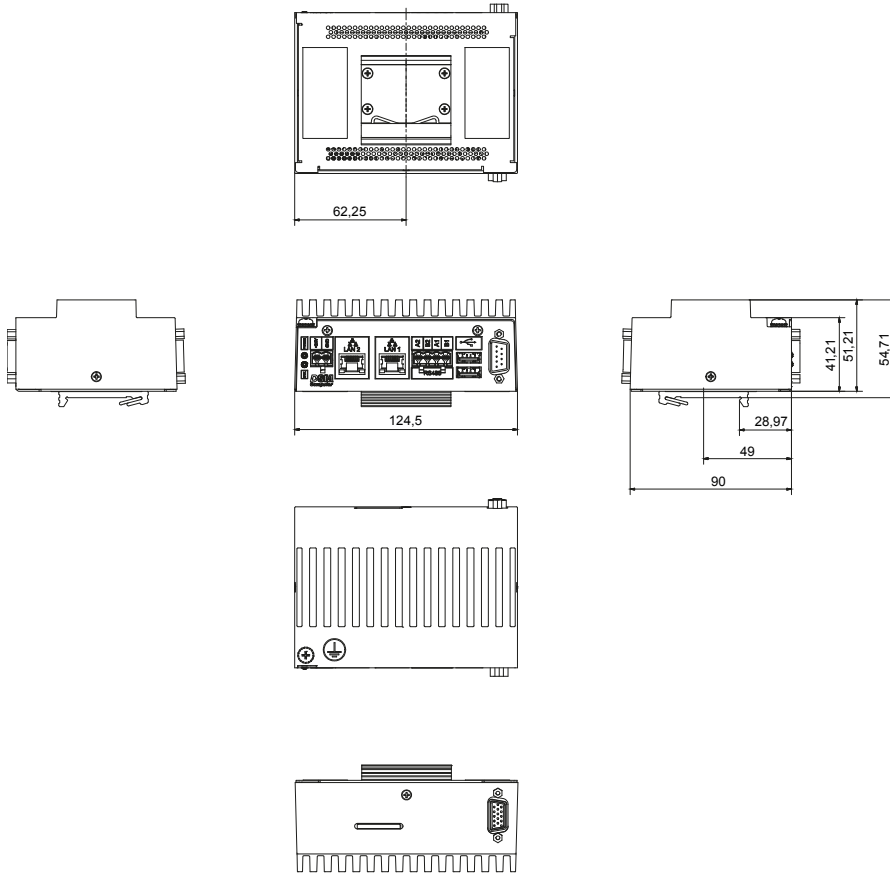
96M1670-Z510

- Intel® Atom™ Z510 1.1 GHz
- 1.8 GB Flash onboard
- Fanless

96M1670-Z530

- Intel® Atom™ Z530 1.6 GHz
- 3.6 GB Flash onboard
- Fanless, TPM (Trusted Platform Module)

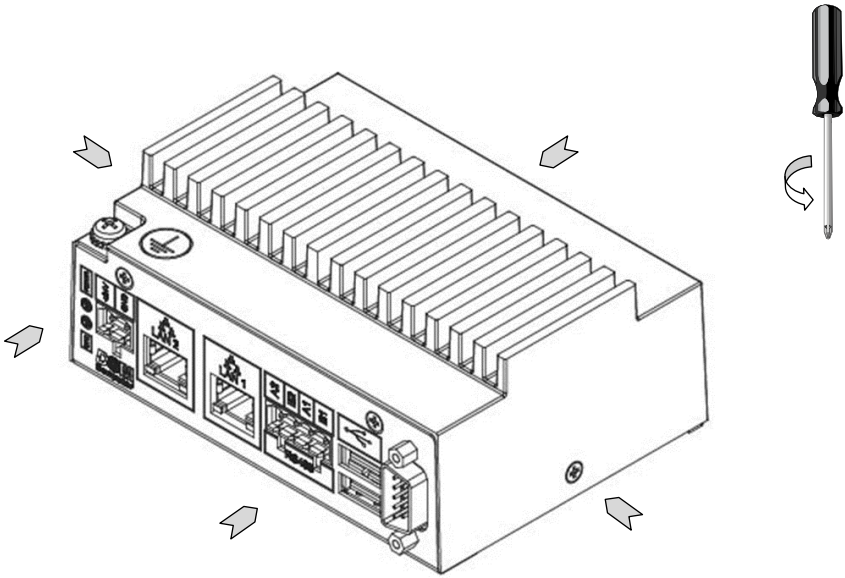
4. Technical Drawing



5. Opening the Device

Before opening the housing, switch off the computer and disconnect the power cable. Remove the screws on the top of the cover and raise it.

Take care that you do not touch any hot components in the system when you open the housing!



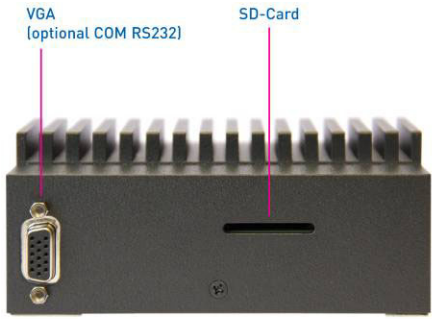
1. Place the device on a soft surface to prevent scratches.

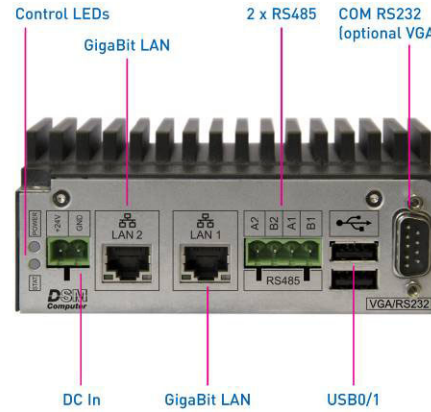
2. Loosen the screws at the top of the housing.

3. Carefully raise the cover.

6. Connectors Locations

6.1 Connector Locations





6.2 Operation/Display

Protective earth conductor (M4x8)

Power On LED
Green: Power On system.

Status Controll LED
Red: Access

6.3 SD-Card Slot

For using of memory cards the unit has a SD-Card Slot on board.
- controller provide by Qseven modul.
- Slot supports SD-, SDIO- and MMC-cards
- maximum Data range is 4 Bit.
- Over current secured by Power Switch with over current detect output.

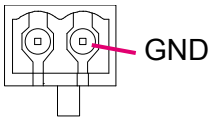
Connector specification:
- Connector type: SD-Card Slot
  Hirose DM1AA-SF-PEJ
- Pinning: to find at SD-Card Specification

6.4 DC Input

For power you have to use +24V DC.
Connector specification:

- connector type: 2 pin .

  Würth 691 313 710 002



6.5 RS485-Interface

For communication there are two RS485 Ports on board.
- Serial Controller USB-Chip (FTDI) or SuperIO
  Other one is needed for RS232.
- In standard configuration RS485 is driven via super IIO, RS232 is driven via USB chip (FTOI). Inverse configuration is available on request.
- RS485 driver: Sipex SP483E
- Termination with 120 Ohm resistor with internal DIP-switch
- Pull-Up / Pull Down failsafe resistor 620 Ohm with internal DIP-switch

RS485 Control over RTS#

The transmit and receive control of RS485 interface at the baseboard Q7-MB-PICO2 occurs over RTS#-Signal at the RS485-interface used UART.
Therefore the 16550 compatible UARTs COM A and COM B of SuperIO W83627DHG from manufacturer Winbond will be used.

Assignment: UART interface - connector

UART	Connector Interface	
COM A	COM1	Pin 1 + 2
COM B	COM2	Pin 3 + 4

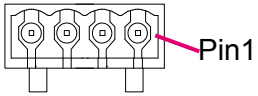
Controlling RTS#-Signals for transmit and receive

	RTS# Signal			
	Level on Transceiver	**Level on SuperIO**	**Status**	**Register**
transmit	High	Low	aktiv	1
receive	Low	High	inaktiv	0

Connector specification:

- connector type: 4 pin .

  Würth 691 313 710 004



- Pinning:

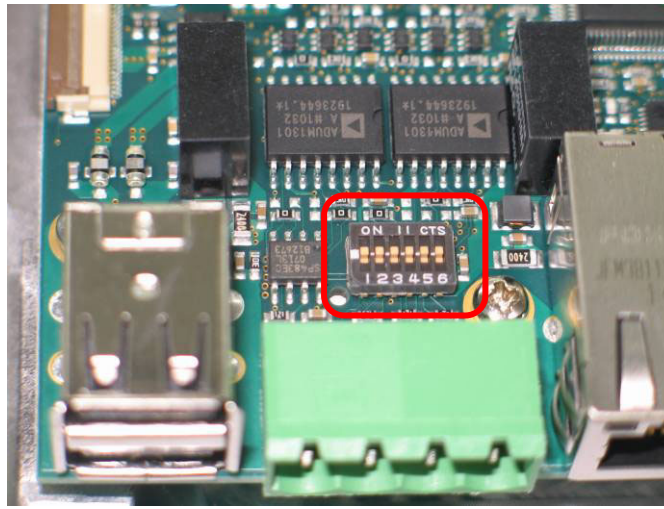
RS485 Interface

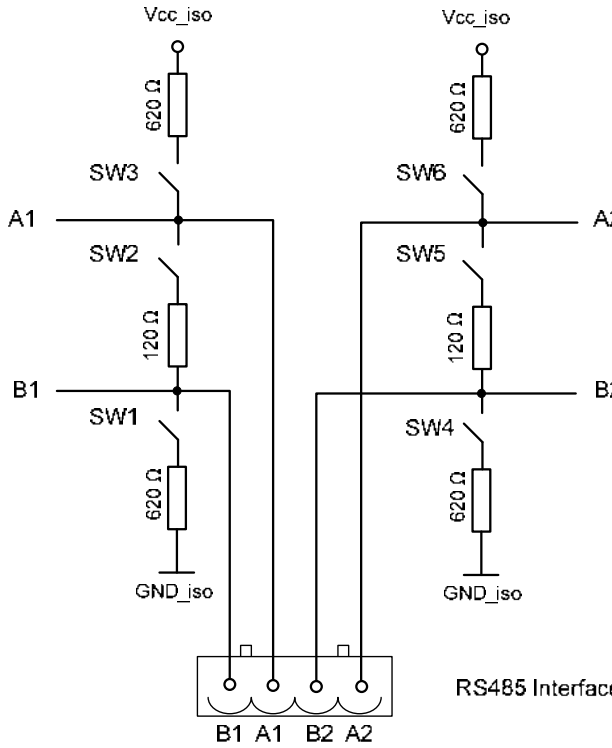
PIN	Signal	function
1	B1	diff. data signal neg. COM1-
2	A1	diff. data signal pos. COM1+
3	B2	diff. data signal neg. COM2-
4	A2	diff. data signal pos. COM2+

Termination switch

SW1	COM1- Idle termination (620 Ohm)
SW2	COM1 differential termination (120 Ohm)
SW3	COM1+ Idle termination (620 Ohm)
SW4	COM2- Idle termination (620 Ohm)
SW5	COM2 differential termination (120 Ohm)
SW6	COM2+ Idle termination (620 Ohm)

The RS422-BUS needs a failsafe-termination. If no party is active the bus will be on defined level over resistor. Only one termination for each Bus required. If more than one termination the system will have malfunction. The switch 1 and 3 for COM1 and switch 4 and 6 for COM2 has to be set together.


ON
CTS
123456


Vcc_iso
Vcc_iso
620 Ω
620 Ω
SW3
SW6
A1
A2
SW2
SW5
120 Ω
120 Ω
B1
B2
SW1
SW4
620 Ω
620 Ω
GND_iso
GND_iso
RS485 Interface
B1 A1 B2 A2

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A. Connectors Pin Assignment

Below you will find detailed descriptions of all standard interfaces found in DSM systems. Depending on model and configuration, not all connectors are available.

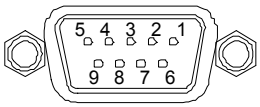
A.1 PS/2 Connector

Signal	Pin
Data	1
n.c. / Mouse Data*	2
GND	3
5V	4
Clock	5
n.c. / Mouse Clock*	6

* On some computers for splitter cable.

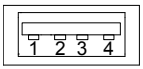
Color Code	Description
purple	Keyboard
green	Mouse

A.2 COM RS232 Connector



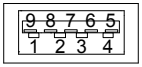
Signal	Pin #	Pin #	Signal
DCD	1	6	DSR
RXD	2	7	RTS
TXD	3	8	CTS
DTR	4	9	RI
GND	5		

A.3 USB 2.0 Connector



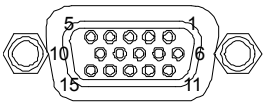
Signal	Pin #
VBUS	1
D-	2
D+	3
GND	4

A.4 USB 3.0 Connector



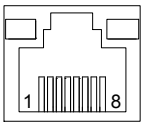
Signal	Pin	Pin	Signal
VBUS	1	5	StdA_SSRX-
D-	2	6	StdA_SSRX+
D+	3	7	GND_DRAIN
GND	4	8	StdA_SSTX-
		9	StdA_SSTX+

A.5 VGA Connector



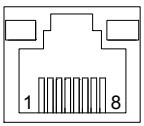
Signal	Pin	Pin	Signal
Red	1	2	Green
Blue	3	4	ID2 / Reserved
GND	5	6	Red GND
Green GND	7	8	Blue GND
n.c.	9	10	Sync GND
ID0	11	12	ID1 / SDA
H / C SYNC	13	14	V SYNC
ID3 / SCL	15		

A.6 100 MBit LAN Connector



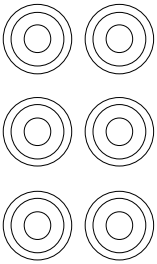
Signal	Pin	Pin	Signal
TX+	1	5	n.c.
TX-	2	6	RX-
RX+	3	7	n.c.
n.c.	4	8	n.c.

A.7 GigaBit LAN Connector



Signal	Pin	Pin	Signal
D1+	1	5	D3-
D1-	2	6	D2-
D2+	3	7	D4+
D3+	4	8	D4-

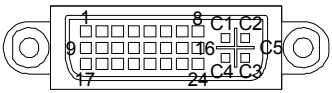
A.8 Audio Connector



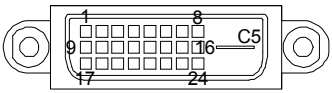
Signal	Pin #	Pin #	Signal
Side Surround	Orange	Blue	Line In
Rear Surround	Black	Green	Line Out
Center/LFE	Grey	Pink	Microphone

A.9 DVI Connector

DVI-I



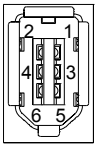
DVI-D



Signal	Pin #	Pin #	Signal
TMDS Data2-	1	13	TMDS Data3+
TMDS Data2+	2	14	+5VDC Power
TMDS Data2/4 Shield	3	15	GND
TMDS Data4-	4	16	Hot Plug Detect
TMDS Data4+	5	17	TMDS Data0-
DDC Clock	6	18	TMDS Data0+
DDC Data (all)	7	19	TMDS Data0/5 Shield
n.c.	8	20	TMDS Data5-
TMDS Data1-	9	21	TMDS Data5+
TMDS Data1+	10	22	TMDS Clock Shield
TMDS Data1/3 Shield	11	23	TMDS Clock+
TMDS Data3-	12	24	TMDS Clock-

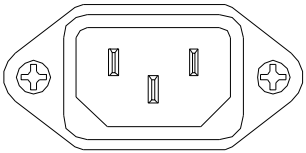
Signal	Pin #
Analog Red	C1
Analog Green	C2
Analog Blue	C3
Analog Horizontal Sync	C4
GND	C5

A.10 FireWire



Signal	Pin #
+12V	1
GND	2
TPB−	3
TPB+	4
TPA−	5
TPA+	6

A.11 AC In 100 ~ 240V

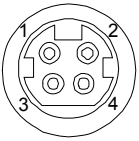


Signal	Pin #
Phase / Neutral	left
GND	center
Phase / Neutral	right

A.12 DC In 12V

Signal	Pin #
+12V	Pin
GND	Shield

A.13 DC In 12V (4 pin)

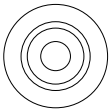


Signal	Pin #
+12V	1,2
GND	3,4

A.14 Composite TV-Out

Signal	Pin #
GND (Y)	1
GND (C)	2
Intensity (Luminance) (Y)	3
Color (Chrominance) (C)	4

A.15 S-VIDEO Out



Signal	Pin #
Video FBAS Y	Pin
GND	Shield

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B. Support / Contact

If you have technical problems or questions about our products you can reach our support under:

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Mon.-Thu. from 8:00 am - 6:00 pm and
Fri. from 8:00 am - 4:00 pm

Fax: +49 (0)89 15798-225

eMail: support@dsm-computer.com

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